AMENDMENTS TO THE CLAIMS:

Please replace the claims with the claims provided in the listing below wherein status, amendments, additions and cancellations are indicated.

1.   (Currently amended)   A three-dimensional image processing apparatus for creating a shadow image on the outer surface of a 3D model using a shadow model formed by a plurality of polygons, comprising:

shadow model storage means for storing at least coordinates of vertices of the shadow model[[,]];

polygon sorting means for sorting the polygons forming the shadow model into front-facing polygons facing in directions toward a viewpoint of a virtual camera and back-facing polygons facing in directions opposite from the viewpoint of the virtual camera, and;

~~shadow image creating means for creating the shadow image in pixels which are pixels corresponding to the front-facing polygons minus those corresponding to the back-facing polygons~~

model image creating means for creating an image by applying rendering to a polygon model except the shadow model;

model image storage means for storing the image created by the model image creating means while relating frame color data, which are color data of pixels, to

Z-values, which are distances to the polygons corresponding to the respective pixels, from the viewpoint of the virtual camera in a simulated three-dimensional space; and

shadow creating means for creating the shadow image in pixels which are pixels corresponding to the front-facing polygons by changing the frame color data of the pixels stored in the model image storage means for shadow creating pixels which are:

pixels corresponding to the front-facing polygons of the shadow model whose distances from the viewpoint of the virtual camera in the simulated three-dimensional space are smaller than the Z-values of the corresponding pixels, and

excluding pixels corresponding to the back-facing polygons of the shadow model whose distances from the viewpoint of the virtual camera in the simulated three-dimensional space are smaller than the Z-values of the corresponding pixels.

2.   (Original) A three-dimensional image processing apparatus according to claim 1, wherein the shadow model storage means stores normal vectors of the respective polygons forming the shadow model, and the polygon sorting means sorts the respective polygon forming the shadow model into the front-facing polygons and the back-facing polygons based on whether an inner product of the normal vector of

each polygon and a camera viewing vector representing a viewing direction of the

virtual camera is a positive or negative value.

3.   (Canceled)

4.   (Currently amended)   A three-dimensional image processing

apparatus according to claim [[3]] 1, wherein the shadow creating means subtracts

a predetermined value from the frame color data of the shadow creating pixels which

are stored in the model image storage means.

5.   (Currently amended)   A three-dimensional image processing

apparatus according to claim [[3]] 1, wherein the shadow creating means multiplies

the frame color data of the shadow creating pixels which are stored in the model

image storage means by a predetermined value.

6.   (Currently amended)   A three-dimensional image processing

apparatus according to claim [[3]] 1, wherein the shadow model storage means stores

a single color data of the shadow model and the shadow creating means subtracts the

color data of the shadow model from the frame color data of the shadow creating

pixels which are stored in the model image storage means.

7.   (Original) A three-dimensional image processing apparatus according to claim 1, wherein the 3D model is a character movable in a simulated three-dimensional space.

8.   (Currently amended)   A readable storage medium storing a three-dimensional image processing program for creating a shadow image on the outer surface of a 3D model using a shadow model formed by a plurality of polygons, the program comprising the steps of:

storing at least coordinates of vertices of the shadow model[[,]];

sorting the polygons forming the shadow model into front-facing polygons facing in directions toward a viewpoint of a virtual camera and back-facing polygons facing in directions opposite from the viewpoint of the virtual camera, and;

creating an image by applying rendering to a polygon model except the shadow model;

storing the image created by the model image creating means while relating frame color data, which are color data of pixels, to Z-values, which are distances to the polygons corresponding to the respective pixels, from the viewpoint of the virtual camera in a simulated three-dimensional space; and

creating the shadow images in pixels which are pixels corresponding to the front-facing polygons minus those corresponding to the back-facing polygons by

changing the frame color data of the pixels stored in the model image storage means

for shadow creating pixels which are:

pixels corresponding to the front-facing polygons of the shadow

model whose distances from the viewpoint of the virtual camera in the

simulated three-dimensional space are smaller than the Z-values of the

corresponding pixels, and

excluding pixels corresponding to the back-facing polygons of the

shadow model whose distances from the viewpoint of the virtual camera in

the simulated three-dimensional space are smaller than the Z-values of the

corresponding pixels.

9.   (Original) A readable storage medium according to claim 8, wherein

normal vectors of the respective polygons forming the shadow model are stored, and

the polygon sorting processing is performed to sort the respective polygon forming

the shadow model into the front-facing polygons and the back-facing polygons based

on whether an inner product of the normal vector of each polygon and a camera

viewing vector representing a viewing direction of the virtual camera is a positive

or negative value.

10.   (Canceled)

11.   (Currently amended) A readable storage medium according to claim [[10]] 8, wherein a predetermined value is subtracted from the frame color data of the shadow creating pixels which are stored in the model image storage means during the shadow image creating processing.

12.   (Currently amended) A readable storage medium according to claim [[10]] 8, wherein the frame color data of the shadow creating pixels which are stored in the model image storage means are multiplied by a predetermined value during the shadow image creating processing.

13.   (Currently amended) A readable storage medium according to claim [[10]] 8, wherein a single color data of the shadow model is stored, and the color data of the shadow model is subtracted from the frame color data of the shadow creating pixels which are stored in the model image storage means during the shadow image creating processing.

14.   (Original) A readable storage medium according to claim 8, wherein the 3D model is a character movable in a simulated three-dimensional space.

15.   (Currently amended) A three-dimensional image processing method for creating a shadow image on the outer surface of a 3D model using a shadow model formed by a plurality of polygons, the method comprising the steps of:

storing at least coordinates of vertices of the shadow model[[,]];

sorting the polygons forming the shadow model into front-facing polygons facing in directions toward a viewpoint of a virtual camera and back-facing polygons facing in directions opposite from the viewpoint of the virtual camera, and;

creating an image by applying rendering to a polygon model except the shadow model;

storing the image created by the model image creating means while relating frame color data, which are color data of pixels, to Z-values, which are distances to the polygons corresponding to the respective pixels, from the viewpoint of the virtual camera in a simulated three-dimensional space; and

creating the shadow images in pixels which are pixels corresponding to the front-facing polygons minus those corresponding to the back-facing polygons by changing the frame color data of the pixels stored in the model image storage means for shadow creating pixels which are:

pixels corresponding to the front-facing polygons of the shadow model whose distances from the viewpoint of the virtual camera in the simulated three-dimensional space are smaller than the Z-values of the corresponding pixels, and

excluding pixels corresponding to the back-facing polygons of the
shadow model whose distances from the viewpoint of the virtual camera in
the simulated three-dimensional space are smaller than the Z-values of the
corresponding pixels.

16.   (Currently amended) A video game system, comprising:

a three-dimensional image processing apparatus for creating a shadow image
on the outer surface of a 3D model using a shadow model formed by a plurality of
polygons, including:

shadow model storage means for storing at least coordinates of
vertices of the shadow model[[,]];

polygon sorting means for sorting the polygons forming the shadow
model into front-facing polygons facing in directions toward a viewpoint of
a virtual camera and back-facing polygons facing in directions opposite from
the viewpoint of the virtual camera, and;

model image creating means for creating an image by applying
rendering to a polygon model except the shadow model;

model image storage means for storing the image created by the
model image creating means while relating frame color data, which are color
data of pixels, to Z-values, which are distances to the polygons

corresponding to the respective pixels, from the viewpoint of the virtual

camera in a simulated three-dimensional space; and

shadow image creating means for creating the shadow image in pixels

which are pixels corresponding to the front-facing polygons ~~minus those~~

~~corresponding to the back-facing polygons,~~ by changing the frame color data

of the pixels stored in the model image storage means for shadow creating

pixels which are:

pixels corresponding to the front-facing polygons of the shadow

model whose distances from the viewpoint of the virtual camera in

the simulated three-dimensional space are smaller than the Z-values

of the corresponding pixels, and

excluding pixels corresponding to the back-facing polygons of the

shadow model whose distances from the viewpoint of the virtual

camera in the simulated three-dimensional space are smaller than the

Z-values of the corresponding pixels;

image display means for displaying an image including a shadow image on

the outer surface of a 3D model[[,]];

program storage means for storing a game program data[[,]]; and

externally operable operation means[[,]];

wherein the three-dimensional image processing apparatus displays images

on the image display means in accordance with the game program data.